

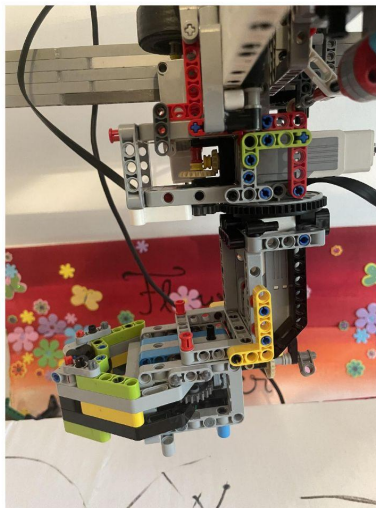
Junior

TEAM NAME

Vrum Vrum Robotics Flower Power



Country: Romania





Flower Power

Our WRO 2022 project 

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**Be unique, be
FLOWER POWER!**



Our team





THE FLOWER POWER TEAM



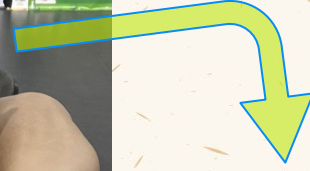
ANA 🤘

My name is Ana, I'm 14, and I like painting, motorcycles, programming, playing the drums and gaming.



OUR COACH 🤘

Our number one fan, the mastermind and our helper was our coach. We couldn't have done this without her!



CRIS 🤘

My name is Cris, I'm 14, and I like building robots, doing arts and crafts, gaming and math.

02

Our project



In the 21st century, many problems that should be talked about aren't. One of them is **child labour**. It is often overlooked since nobody thinks it's real, but it's getting realer than ever. Companies we rely on and trust, like H&M, Forever 21, Nike, Adidas, Zara, GAP and more, mercilessly use children, **stealing their childhood** by making them work in factories. These kids are prone to getting diseases since there is **barely any protection** from the chemicals used in clothing and are taken away forcefully from their loved ones, **tearing families apart**.



We invented the solution to the problems mentioned. **Meet Ivy!** Your robot friend that paints your t-shirts. Our robotic solution is able to autonomously paint t-shirts. It uses a intelligent robotic arm that pick up and uses paint brushes to create a unique and fashionable design on your clothing.

Ivy has 2 uses:

Factory use:

We sell the robot for companies to use in factories instead of children

Charity use:

Tourists buy painted t-shirts from our booths and the profit goes to charity



The marketing potential of our project is incredible as our robot has a big WOW factor simply from the fact that it is a robot that paints by itself and visitors will be more attracted to the idea of buying a special t-shirt that holds a story.



Business plan

Profit

We have high profit margins because of the ad revenue and low costs

Materials

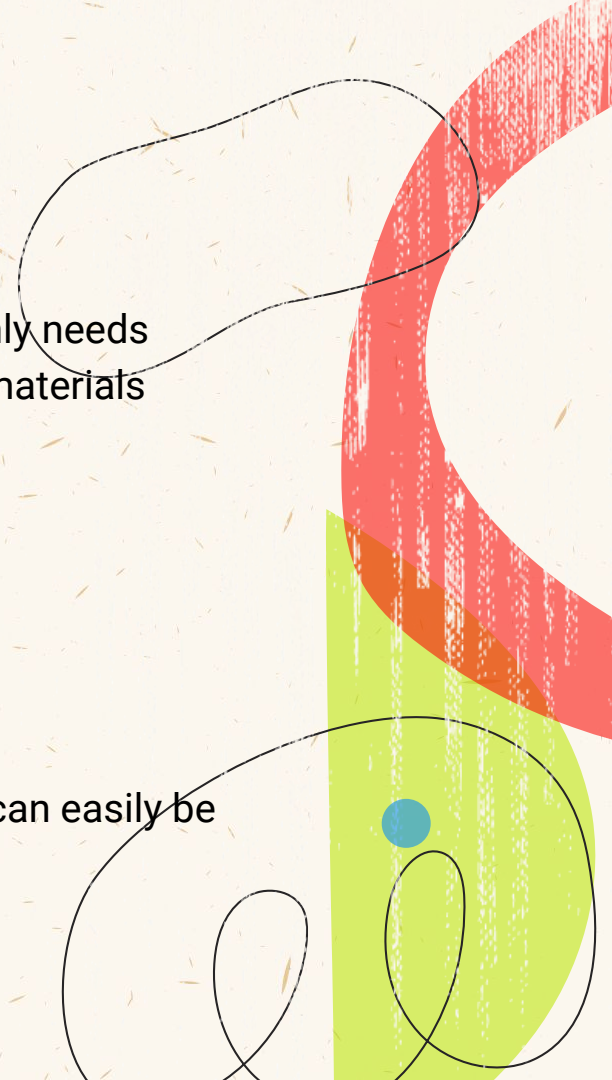
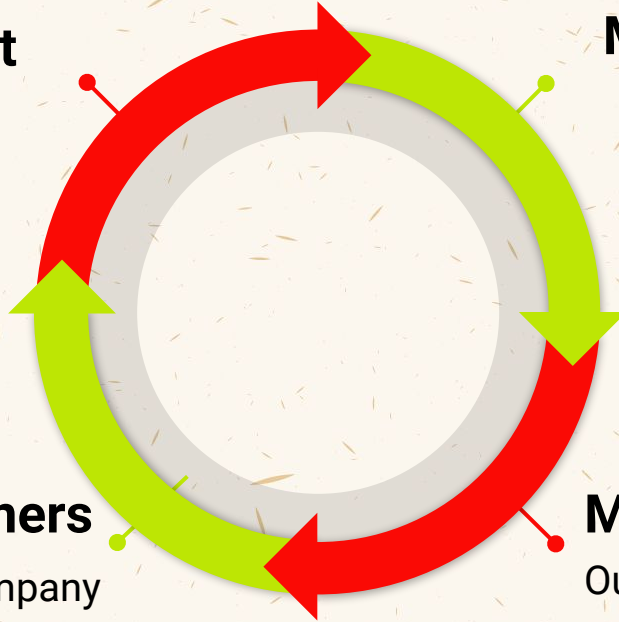
The robot only needs accessible materials

Partners

The robot can use company logos as a form of advertisement

Market

Our robot booth can easily be moved around





T-shirt	Paint	Price	Gross Profit	taxes	Net Profit
2.7 euro	1.8 euro/shirt	15 euro	10,5 euro	19% + 16%	5.7 euro

Robot costs:

- Lego sets: 1220 euro
- Structure: 35 euro
- Solar panel: 150 euro

Total: 1405 euro

Utilities:

- We estimate that our robot consumes about 15 Watts of energy.
- So in order to be more sustainable we can put a *solar panel* to produce the current.
- A solar panel with 20% efficiency would produce ~50 kWh

Research

03



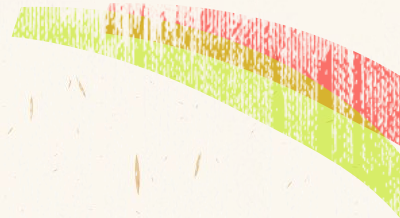


Possibly similar concepts

Because of the fact that our robot is very similar to a 3D Printer, any 3D Printer or robotic arm *could* be our competition, however not one of them sell painted T-shirts.

1. **Quincy Drawing Robot** - an interactive drawing robot for children up to 8 years old
2. **Okibo,Canvas** - any robotic wall plastering/painting arm
3. **Ai-Da** - a human-looking robot that has mastered the skill of painting like a human, its eyes fixated on the object or person in front of her. Ai-Da's portraits have sold for up to 1 million dollars.

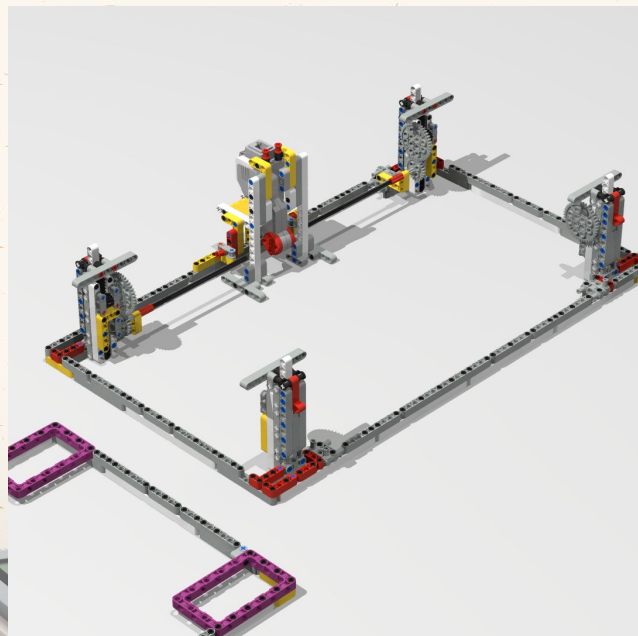
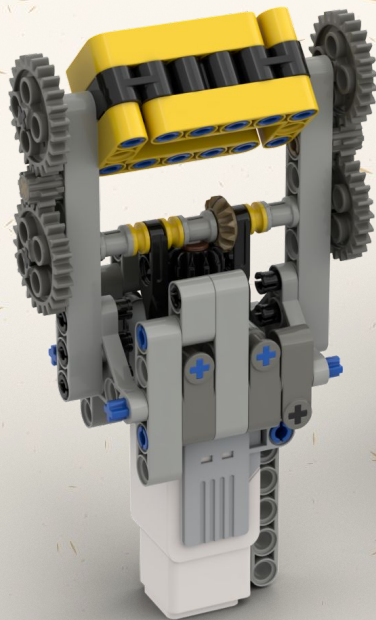
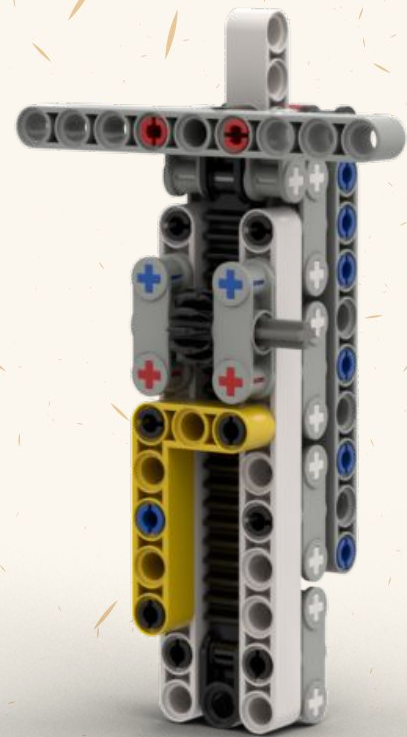




Even though our competition is similar, none of the other painting AIs have done their work for a good purpose like us. However, we couldn't have been the best at what we do without any competition!



Because of the distance barrier, we learned how to make 3D models in stud.io, to share robot designs with each other



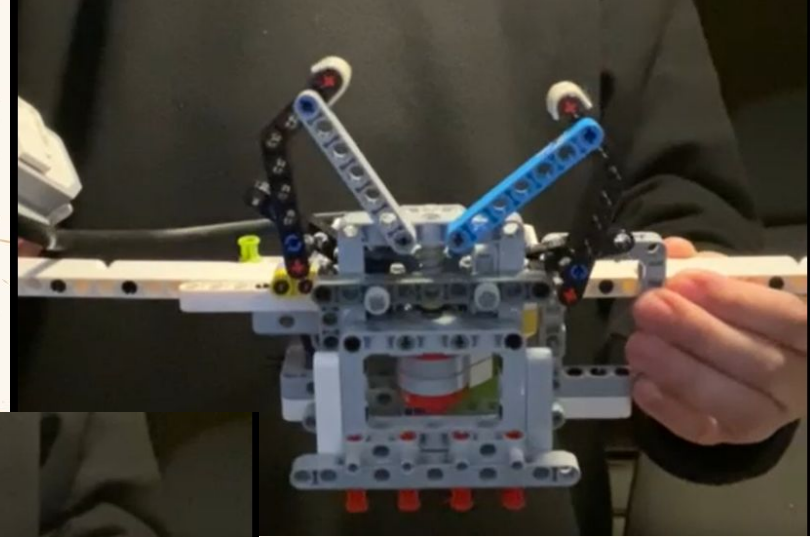
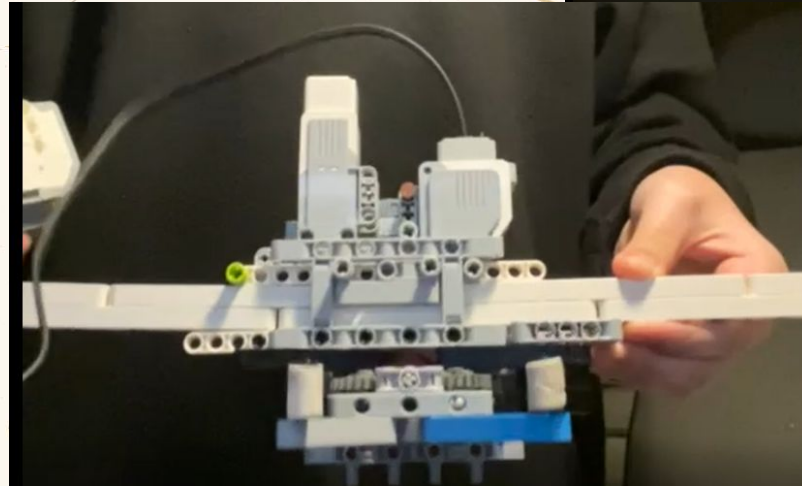
An abstract graphic on the right side of the slide. It features a large, light green, textured shape at the top. Below it is a blue, textured shape that resembles a stylized figure or a splash. To the right of the blue shape is a red, textured, curved line. A black crosshair is drawn over the intersection of the blue and red shapes.

04

The process

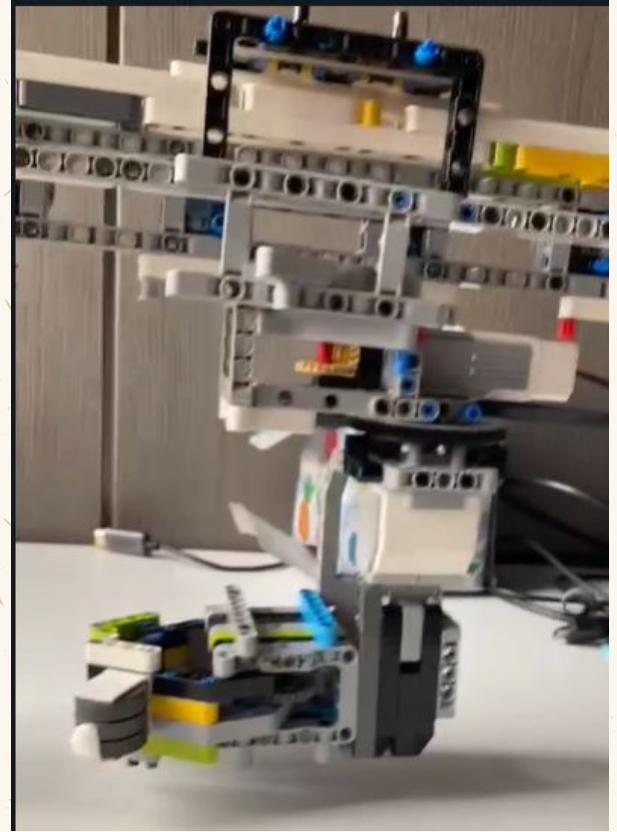
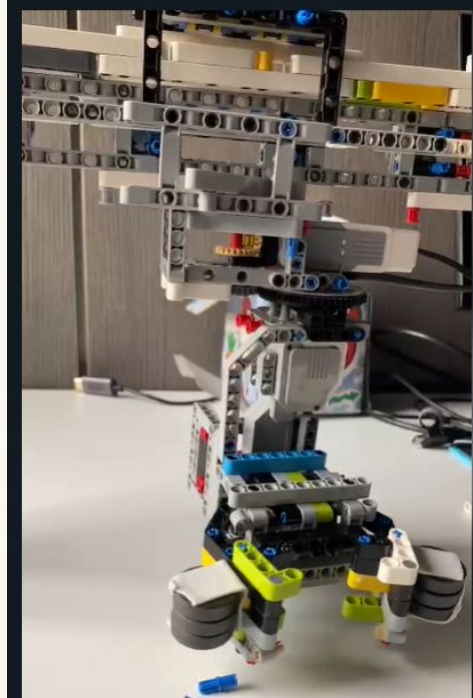
The first iteration of the robotic arm

For the first iteration, we did not implement the rotation of the claw, which we decided we would do later on.



The second iteration of the robotic arm

To see if it is strong enough, we put some weights on the claw to simulate the stress it would encounter.



We made the structure out of a metal shelf so that we had more structural rigidity.



An abstract graphic on the left side of the slide. It features a large, irregular black outline. Inside the top part of this outline is a cluster of red dots of varying sizes. To the left of the main outline, there are several bright green circles of different sizes, with blue scribbled lines overlapping them.

Thank you for viewing our presentation!

We wish you all the best, and we hope
you liked our project!